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a Report to Iowa School Girls:

LOOK WHAT A GOOD DIET CAN DO!



This is a report about girls your own age — busy girls who missed out on some meals, who nibbled between times and had food habits much like yours. This is the story of what happened when they “stepped up” their nutrition.

by **Ercel S. Eppright and Charlotte Roderuck**

MOST SCHOOL MORNINGS are a rush. You tumble out of bed and spend those precious few minutes getting dressed to look your nicest. You gather up your books, rush for the bus, and the school day has begun.

Wait a moment! Did you eat breakfast?

“Cereal and milk,” you say. Or, “I didn’t have time.” Or, “I wasn’t hungry.”

And so the school day starts. Along about mid-morning, you wish you had something to eat. Maybe you do eat something — maybe candy.

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To have a “snack” at school each morning just before you started classes would seem strange, wouldn’t it? But this is a report of a study of some 200 girls of about your age who actually did have something to eat at school — once each morning before classes started

and again later in the morning for several months during 2 school years. You’d call these foods snacks — a whole variety of snacks ranging from chocolate malted milk to pineapple juice. They were, however, carefully chosen supplementary foods. We wanted to find what nutritional differences these supplementary snacks would make.

Matched Groups . . .

We studied two groups of girls at different schools. At the beginning of the study, the girls were 8-14 years old; at the end, 10-16. The groups were alike in age and were matched as nearly as possible in physique. We wished the groups to be as similar as possible because each group was given snacks that differed in nutrient content, and we wanted to compare the two groups for differences that developed.

The girls in Group 1 had snacks chosen mainly from the foods listed under Group 1 in the table, but each day their snacks included the equivalent of 1 pint of fluid whole milk. The girls in Group 2 had the variety of foods listed in the table under Group 2 with a glass of fruit juice served each day.

Each day brought different foods. The girls in Group 1, for example, might start their day with a chocolate milk drink — and then have carrot sticks and Ritz crackers at recess. The girls in Group 2 might start the day with grape juice or pineapple juice — and then have celery sticks and Ritz crackers at mid-morning. The menus were changed the next day. But always

Foods used in supplements for two groups of Iowa school girls.

Group 1	Group 2
snack supplements	snack supplements
Orange juice	Grape juice
Chocolate malted milk	Lemonade
Tangerine juice	Canned pears
Limeade	Fresh apples
Apricot nectar	Pear and cranberry juice
Carrot sticks	Peach nectar
Canned apricots	Applesauce
Vanilla milk	Pear nectar
Strawberry milk	Apple juice
Tomato juice	Fruit cocktail
Grapefruit sections	Celery sticks
Peanut butter milk	Dried prunes
Dried apricots	Ritz crackers
Ritz crackers	

the amount of food served to each girl was the same.

No girl had to eat every food. But we did keep records of the foods each girl ate and of the foods she refused.

Why Snacks?

Why the special snacks? Were they part of a new type of school

lunch program? No. The snacks had nothing to do with the school lunch program. But they did relate to the kinds of foods you, and girls like you, eat every day. It was an experiment to see what would happen if girls had these foods every school day.

It's one thing to want a trim figure, a clear complexion, glossy hair and all the signs of outward pret-

tiness and pep that good health and nutritional fitness may bring. You do want that, don't you? But it's something else to *achieve and maintain* this kind of glowing health. If you make only a poor choice of foods day after day, you *are* missing out.

Nutrition research studies made over many years on food habits of Iowa girls your age show that many aren't selecting a good variety of foods each day. Unless you're a very unusual girl, this means that you don't eat enough vitamin C-rich fruits and vegetables, or enough dark green leafy vegetables, or enough eggs and milk to give you a highly nutritious diet.

Perhaps you skip breakfast, or, if you do eat breakfast, you only have a bowl of cereal with a little milk added. And chances are you don't eat eggs very often. But you do nibble on sweets and desserts frequently to be sociable and to satisfy your appetite.

Our research shows that you are *heavier*, but *not taller*, than girls your age 20 years ago. We know that the foods you eat each day may be the reason you weigh more. Also you may not be as active physically as girls of your age that many years ago. At any rate, many of you are eating more of some foods than you need. You're probably concerned about this.

We also know that what you're *not* eating is depriving you of needed calcium, vitamin C, sometimes vitamin A and, quite often, iron. Unless the foods you eat contribute these needed nutrients, you can't be nutritionally fit — even though you work hard to make your face, hair and figure attractive. How you *feel* (peppy or tired), how you *act* (energy for many activities) and how you *look* (figure, complexion, hair, etc.) all relate to what you eat every day.

The food supplement (snack) program was a 2-year nutrition research project carried out with the help of girls your age. Could the girls, by having the supplementary foods given Group 1 each day, actually improve their diets and their nutrition? Could they do so without gaining unnecessary weight? Could they prove to themselves, and to us, that these foods,



Blood samples taken seven times during the 2-year tests revealed the blood stream content of hemoglobin, vitamin C and vitamin A.



Acceptance of food supplements was recorded. Most people dislike some foods, but you can select substitutes for foods you dislike.

as a supplement to their regular diets, did make a difference?

How We Tell . . .

Perhaps you look in a mirror to see if you've grown taller or have put on weight. Nutrition research demands careful observation — for we must determine, as accurately as possible, what changes actually take place within the body.

We took body measurements of each girl many times during the 2-year study. These measurements told us about her weight, height and general growth.

Seven times, we took samples of blood for analyses. These analyses revealed the blood stream content as regards hemoglobin, vitamin C and vitamin A. Also, we wanted to know if the snack supplements the girls ate increased the supply of these constituents of the blood.

Dental examinations were made about five times during the study. Also, we kept complete records of all foods each girl had for a number of days throughout the study period. So we knew, not only whether she had eaten the snacks provided for Group 1 or Group 2, but also what she ate in addition.

Snack Differences . . .

You've probably guessed by now that there were some important differences between the snacks offered to the girls in Group 1 and those offered to the girls in Group 2. Here are the main differences:

The snacks offered to the girls in *Group 1* provided large amounts of the nutrients frequently found in short supply in diets of girls of your age — *calcium, vitamin C* and *vitamin A*. The concentrated frozen milk drinks (chocolate, vanilla) provided much-needed calcium. The orange juice, tangerine juice and grapefruit were rich in vitamin C. The carrot sticks and tomato juice provided carotenoids, which the body can convert to vitamin A.

The snacks for the girls in *Group 2* also were good to eat. However, they were less nutritious than the snacks for girls in *Group 1*.

What Good Snacks Can Do

Good snacks can upgrade the nutrient supply of your diet! This is

what happened for the girls in *Group 1*:

- For most girls, these needed nutrients — calcium, vitamin C, vitamin A and vitamin D — came up to recommended allowances.

- The citrus fruits gave the vitamin C "lift;" and the carrot sticks added carotene, which the body can use as a source of vitamin A.

- Milk gave the calcium "lift." The girls in *Group 1* had an equivalent of about 4 cups daily. Does this surprise you? The additional milk did not cause the girls to omit any of the other important foods they had been eating.

With these snacks, almost all girls in *Group 1* had what was close to an excellent diet. Did they gain weight? Not significantly. The girls with the more nutritious snack supplements may have gained slightly more, on the average, than the girls with the less nutritious snacks. Girls who already were heavy, however, may have gained more than the others.

What does this mean? It means that those of you who tend to gain weight may find it necessary to reduce your *total* food intake. Particularly, you'll want to make careful *choices* of foods. Omit (as much as possible) those foods that have high energy value but are also low in protein, vitamins and minerals. Choose the nutrient-rich foods first. If cutting down on amount of food is a problem, step up your physical activity.

The dental examinations gave a most encouraging sign. Tooth decay may have been retarded somewhat for the girls in *Group 1* who had the very nutritious snacks.

There Is a Way . . .

There *is* a way, you see, to become nutritionally *fit* without becoming *fat*. If you snack, good

snacks can help you do this. But they must be "instead of" rather than in addition to some of the foods regularly eaten at meals.

One nutrient, *iron*, still is low in the diets of many teenage girls. You need iron, but, if you eat lean meat often, green leafy vegetables, liver now and then and a few eggs every week, you probably get enough of it. Perhaps you don't like to eat an egg for breakfast, but you do need to have eggs in some form several times a week.

Another point: Carrot sticks and tomato juice are excellent to give you added sources of vitamin A. But dark green leafy vegetables also do this. You need to include them in your daily meals.

This brings up the question of food dislikes. If, for example, you dislike or ignore a dark green leafy vegetable like spinach, you must get the needed vitamin A in some other way.

If you're typical, you dislike a few foods — perhaps three to five. This was the average for the girls in our study. But you may be selecting from only a limited variety of foods. You can, by choosing wisely, find good substitutes for the disliked foods. If you dislike as many as 16 foods (a few girls in our study did), you limit yourself to the same foods over and over. And, unless you're extremely careful, you won't get many important nutrients. Of the girls in our study, for example, only 18 had *no* food dislikes.

If, instead of so many foods to eat, we had only a few, we probably wouldn't allow ourselves the luxury of food dislikes. But we do have many foods — some much more nutritious than others. These nutritious foods, including those given to the girls in *Group 1*, do make a big difference. They're your insurance for better nutrition. For nutritional fitness and that trim figure you want, choose your daily foods wisely — it's in *your* interest.

We Studied School-Girl Diets

Over the past 15 years we've studied the diets and nutrition of Iowa school girls. In 1948, we studied intensively the girls in one school in Iowa; then, in 1948-52 a statewide sample; in 1954-56, the girls in four schools in one county, and in 1960-61 girls in a school in a large town.

In 1954-56, we tried to improve the girls' diets by offering a nutritious snack at four schools over two periods of several months each, and observed the results on the total diet and on the growth and health of the girls. "Look What A Good Diet Can Do!" is our report to Iowa schoolage girls on the results of this study.